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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/394,379	09/10/1999	KYOUNG SUB KIM	008733-D7151	4146

30827 7590 07/11/2003

MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER

QI, ZHI QIANG

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 07/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/394,379

Applicant(s)

KIM, KYOUNG SUB

Examiner

Mike Qi

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 25 is objected to because of the following informalities:

Claim 25, recitation "... wherein the non-transparent does not overlap at least a Portion of one edge of the sheet material." Should be changed into "... wherein the non-transparent film does not overlap at least a Portion of one edge of the sheet material."

Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, 10-23, 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant admitted prior art (AAPA) in view of US 5,739,880 (Suzuki et al).

Claims 1, 15, 25 and 26, AAPA discloses (page 2, line 24 – page 4, line 20; Figs.1-2 of the specification) a liquid crystal display device having light source (20) and comprising:

(concerning claims 1 and 15):

- a first substrate (4);

- a second substrate (6) having first and second surfaces (upper and lower surfaces), wherein the first surface (upper surface) is disposed against the first substrate (4);
- a black pattern (24) (non-transparent film) is printed on the left edge of the protective sheet (10a) and it is on the lower surface of the second substrate (6);
- a sheet material (10) disposed between the light source (20) and the second substrate (6), and at least a portion of one edge (such as the right edge) of the sheet material (10) is not directly under the black pattern (24) (the non-transparent film);

(concerning claims 25-26)

- the black pattern (24) (non-transparent film) does not overlap at least of one edge (such as the right edge) of the sheet material (10).

AAPA does not expressly disclose a non-transparent film coated on a periphery of the second surface (lower surface) of the second substrate.

However, Suzuki discloses (col.12, line 28 – col.15, line 51; Figs.2-9) that a liquid crystal display device having a shield tape (TAPE) is stuck to the lower face of the lower substrate (SUB1) at the portion in which the seal member (SL) and the black matrix (BM) are not overlapped, and the shield tape (TAPE) is preferable black, and the shielding means is a shielding coating film, so as to prevent the leakage of the back light (BLL). The shield tape (TAPE) is along the seal member (SL) (see Figs. 2 and 9),

such that the shield tape (TAPE) is coated on the periphery of the lower face of the lower substrate to block the light emitted from the light source.

Suzuki indicates (col.15, lines 3-11) that the shield tape (TAPE) is stuck to the outside of the substrate (SUB1), and the light (BLL) emitted from the back light is interrupted at the portion other than the display region by the black matrix (BM) and the shield tape (TAPE), so that a color liquid crystal display element having an excellent display quality.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to use a non-transparent black film coated on a periphery of the lower surface of the lower substrate as claimed in claims 1, 15, 25 and 26 for preventing the light leakage from the back light and achieving an excellent display quality.

Claims 2 and 16, AAPA discloses (Fig.1-2) that the black matrix (26) (non-transparent material) is formed in the periphery portion and is formed on the lower surface (second surface) of the upper substrate (4) (first substrate).

Claims 3 and 17, the black matrix (non-transparent material) is formed on the upper surface (first surface) of the lower substrate (second substrate) would have been at least an obvious variation according to the different application to improve the display contrast.

Claims 6 and 20, see the explanation of Suzuki above, Suzuki discloses (Fig.9) that the shield tape (TAPE) (non-transparent film) and the black matrix (BM) (non-transparent material) are partially overlapping throughout the periphery of the lower

substrate (SUB1) (second substrate), so as to block the light leakage from the back light (BLL).

Claim 10, AAPA (Figs.1-2) discloses that a sheet material (10) includes a protective sheet (10a), a prism sheet (10b) and a diffusion sheet (10c) and disposed between the light source (20) and the second substrate (6).

Claim 11, AAPA discloses (Fig.1-2) that the black matrix (BM) (non-transparent material) is formed in the periphery portion and is formed on the lower surface (second surface) of the upper substrate (4) (first substrate).

Claim 12, see the explanation of Suzuki above, Suzuki discloses (Fig.9) that the shield tape (TAPE) (non-transparent film) and the black matrix (BM) (non-transparent material) are partially overlapping throughout the periphery of the lower substrate (SUB1) (second substrate), so as to block the light leakage from the back light (BLL).

Claims 4-5, 7-8,13-14,18-19, 21-22, AAPA discloses (Figs.1-2) the non-transparent material is a black matrix (26); the non-transparent film is a black pattern (24) (black film).

Claim 23, AAPA discloses (page 4, lines 3-5 of the specification) that the black pattern (24) (black film) is printed. Suzuki discloses (col.15, lines 49-51) that the shielding means (black film) is a shielding coating film. Therefore, it would have been at least obvious to make a black film using printing process or coating process.

3. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant admitted prior art (AAPA) in view of US 5,739,880 (Suzuki et al) and US 6,504,598 (Kashima et al).

Claim 24, AAPA discloses (page 2, line 24 – page 4, line 20; Figs.1-2 of the specification) a liquid crystal display device having light source (20) and comprising:

- a first substrate (4);
- a second substrate (6) having first and second surfaces (upper and lower surfaces), wherein the first surface (upper surface) is disposed against the first substrate (4);
- a black pattern (24) (non-transparent film) is printed on the left edge of the protective sheet (10a) and it is on the lower surface of the second substrate (6);
- a sheet material (10) disposed between the light source (20) and the second substrate (6).

AAPA does not expressly disclose a non-transparent film coated on a periphery of the second surface (lower surface) of the second substrate, and the sheet material comprising an uppermost sub-layer having a first length and at least one underlying sub-layer arranged under the uppermost sub-layer and having a second length, and the first length is substantially equal to the second length.

However, Suzuki discloses (col.12, line 28 – col.15, line 51; Figs.2-9) that a liquid crystal display device having a shield tape (TAPE) is stuck to the lower face of the lower substrate (SUB1) at the portion in which the seal member (SL) and the black matrix (BM) are not overlapped, and the shield tape (TAPE) is preferable black, and the shielding means is a shielding coating film, so as to prevent the leakage of the back light (BLL). The shield tape (TAPE) is along the seal member (SL) (see Figs. 2 and 9),

such that the shield tape (TAPE) is coated on the periphery of the lower face of the lower substrate to block the light emitted from the light source.

Suzuki indicates (col.15, lines 3-11) that the shield tape (TAPE) is stuck to the outside of the substrate (SUB1), and the light (BLL) emitted from the back light is interrupted at the portion other than the display region by the black matrix (BM) and the shield tape (TAPE), so that a color liquid crystal display element having an excellent display quality.

Although Suzuki does not disclose the sheet material layers have equal lengths.

However, Kashima discloses (col.1, lines 21-33; Fig.11) that a typical structure of a conventional backlight system and an LCD device in which using diffusion sheet (25) to diffuse the light emitted from the light guide (22) and using prism sheet (26) to converge the light emitted from the light guide (22), and the diffusion sheet (25), the prism sheet (26) having equal lengths (see Fig.11). Because the light emitted from the light guide is diffused by the diffusion sheet, and is converged by the prism sheet to enter the liquid crystal cell, so that the luminance would be enhanced and the viewing angle would be enlarged. Conventionally, using a protection sheet to protect the underlying sheet from the dust or scratches.

Since using equal lengths for the protection sheet, prism sheet and the diffusion sheet would be easy to manufacture and would have sufficient luminance in a high efficiency.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to use a non-transparent black film coated on a periphery of the

lower surface of the lower substrate as claimed in claims 24 for preventing the light leakage from the back light and achieving an excellent display quality.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to use equal lengths for the protection sheet, prism sheet and diffusion sheet as claimed in claim 24 for achieving sufficient luminance in a high efficiency.

Response to Arguments

4. Applicant's arguments with respect to claims 1-8 and 10-26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (703) 308-6213.


The examiner can normally be reached on 349.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Mike Qi
June 19, 2003


ROBERT H. KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800